What Is Claimed Is:

1. An aluminum matrix composite article comprising a plurality of fibers in a matrix comprising aluminum; wherein the fibers comprise, on a theoretical oxide basis, Al_2O_3 in a range of about 35 weight percent to about 75 weight percent, SiO_2 in a range of greater than zero weight percent to less than about 50 weight percent, and B_2O_3 in a range of greater than about 5 weight percent, based on the total metal oxide content of the respective fiber; and further wherein the wire has a nonlinear coefficient of thermal expansion over a temperature of -75°C to 500°C, a modulus of no greater than about 105 GPa, and an average tensile strength of at least about 350 MPa.

2. The aluminum matrix composite article of claim 1 comprising an elongated metal composite article.

3. An aluminum matrix composite wire comprising a plurality of substantially continuous, longitudinally positioned fibers in a matrix comprising aluminum; wherein the fibers comprise, on a theoretical oxide basis, Al_2O_3 in a range of about 35 weight percent to about 75 weight percent, SiO_2 in a range of greater than zero weight percent to less than about 50 weight percent, and B_2O_3 in a range of greater than about 5 weight percent, based on the total metal oxide content of the respective fiber; and further wherein the wire has a nonlinear coefficient of thermal expansion over a temperature of -75°C to 500°C, a modulus of no greater than about 105 GPa, and an average tensile strength of at least about 350 MPa.

4. The wire of claim 3 wherein the matrix comprises at least 99.95 percent by weight aluminum, based on the total weight of the matrix.

5. The wire of claim 3 wherein at least about 85% by number of the fibers are substantially continuous.

6. The wire of claim 3 wherein the SiO_2 is present in an amount of at least about 15 weight percent, based on the total metal oxide content of the respective fiber.

7. The wire of claim 3 wherein the B_2O_3 is present in an amount of less than about 25 weight percent, based on the total metal oxide content of the respective fiber.

8. The wire of claim 3 comprising no greater than about 65 volume percent of the fibers, based on the total volume of the wire.

9. The wire of claim 8 comprising at least about 15 volume percent of the fibers, based on the total volume of the wire.

10. The wire of claim 9 comprising no greater than about 55 volume percent of the fibers, based on the total volume of the wire.

11. The wire of claim 10 comprising about 28 volume percent to about 50 volume percent of the fibers, based on the total volume of the wire.

12. The wire of claim 3 having thermal expansion behavior represented by lines 1 or 2 of the graph of Figure 1.

13. The wire of claim 3 having a modulus of at least about 42 GPa.

14. The wire of claim 3 having a modulus of about 48 GPa to about 84 GPa.

15. The wire of claim 3 having an average strain to failure of no greater than about 2.5%.

16. The wire of claim 15 having an average strain to failure of no greater than about 1.2%.

17. The wire of claim 16 having an average strain to failure of no greater than about 1.0%.

18. The wire of claim 3 having a longitudinal tensile strain of at least about 90% of the value of the theoretical fiber strain to failure for all fiber fractions.

19. The wire of claim 18 having a longitudinal tensile strain of at least about 95% of the value of the theoretical fiber strain to failure for fiber fractions less than or equal to 35 volume percent fiber.

20. The wire of claim 3 wherein the fibers further comprise, on a theoretical oxide basis, B_2O_3 in a range of about 10 weight percent to about 20 weight percent, based on the total metal oxide content of the respective fiber.

21. The wire of claim 3 wherein the length of the wire is at least about 300 meters.

22. A method for making an aluminum matrix composite wire comprising a plurality of substantially continuous, longitudinally positioned fibers in a matrix comprising aluminum, the method comprising:

providing a contained volume of molten matrix material;

immersing a plurality of substantially continuous fibers into the contained volume of molten matrix material, wherein the fibers comprise, on a theoretical oxide basis, Al_2O_3 in a range of about 35 weight percent to about 75 weight percent, SiO_2 in a range of greater than zero weight percent to less than about 50 weight percent, and B_2O_3 in a range of greater than about 5 weight percent, based on the total metal oxide content of the respective fiber;

imparting ultrasonic energy to cause vibration of at least a portion of the contained volume of molten matrix material to permit at least a portion of the molten matrix material to infiltrate into and wet the plurality of fibers such that an infiltrated, wetted plurality of fibers is provided; and

withdrawing the infiltrated, wetted plurality of fibers from the contained volume of molten matrix material under conditions which permit the molten matrix material to solidify to provide an aluminum matrix composite wire comprising a plurality of the fibers, wherein the fibers are substantially continuous, longitudinally positioned in a matrix including aluminum, and wherein the wire has a nonlinear coefficient of thermal expansion over a temperature of -75°C to 500°C, a modulus of no greater than about 105 GPa, and an average tensile strength of at least about 350 MPa.

23. A cable comprising at least one aluminum matrix composite wire comprising a plurality of substantially continuous, longitudinally positioned fibers in a matrix comprising aluminum; wherein the fibers comprise, on a theoretical oxide basis, Al_2O_3 in a range of about 35 weight percent to about 75 weight percent, SiO_2 in a range of greater than zero weight percent to less than about 50 weight percent, and B_2O_3 in an amount of greater than about weight 5 percent, based on the total metal oxide content of the respective fiber; and further wherein the wire has a nonlinear coefficient of thermal expansion over a temperature of -75°C to 500°C, a modulus of no greater than about 105 GPa, and an average tensile strength of at least about 350 MPa.

24. The cable of claim 23 wherein the matrix comprises at least 99.95 percent by weight aluminum, based on the total weight of the matrix.

25. The cable of claim 23 wherein at least about 85% by number of the fibers are substantially continuous.

26. The cable of claim 23 wherein SiO_2 is present in an amount of at least about 15 weight percent.

27. The cable of claim 23 wherein B_2O_3 is present in an amount of less than about 25 weight percent.

28. The cable of claim 23 wherein the wire has thermal expansion behavior represented by lines 1 or 2 of the graph of Figure 1.

29. The cable of claim 23 comprising at least about 15 volume percent fiber.

30. The cable of claim 29 comprising no greater than about 65 volume percent fiber.

31. The cable of claim 30 comprising about 28 volume percent fiber to about 50 volume percent fiber.

32. The cable of claim 23 comprising a plurality of nonstranded wires.

33. The cable of claim 32 having a cable modulus of no greater than about 105 GPa.

34. The cable of claim 33 having a cable modulus of at least about 42 GPa.

35. The cable of claim 34 having a cable modulus of about 49 GPa to about 84 GPa.

36. The cable of claim 23 comprising a plurality of stranded wires.

37. The cable of claim 36 wherein the wires are helically stranded.

38. The cable of claim 23 further comprising a plurality of secondary wires.

39. The cable of claim 38 wherein the secondary wires are metal wires.

40. The cable of claim 39 wherein the metal wires are aluminum wires.

41. The cable of claim 38 comprising a core and a shell wherein the core comprises the composite wires and the shell comprises the secondary wires.

42. The cable of claim 23 further comprising a tape overwrap.

43. The cable of claim 23 wherein the fiber further includes, on a theoretical oxide basis, B_2O_3 in a range of about 10 weight percent to about 20 weight percent.

44. The cable of claim 23 wherein the wire has a length of at least about 300 meters.

45. An aluminum matrix composite wire comprising a plurality of substantially continuous, longitudinally positioned ceramic oxide fibers in a matrix comprising aluminum; wherein the ceramic oxide fibers have a modulus of no greater than about 173 GPa; and further wherein the wire has a modulus of no greater than about 105 GPa.

46. The composite wire of claim 45 wherein the wire has an average tensile strength of at least about 350 MPa.

47. The composite wire of claim 45 wherein the fibers have a modulus of greater than about 69 GPa.

48. The composite wire of claim 45 wherein the fibers have an average tensile strength of at least about 1400 MPa.

49. The composite wire of claim 45 wherein the fibers comprise, on a theoretical oxide basis, Al_2O_3 in a range of about 35 weight percent to about 75 weight percent, SiO_2 in a range of greater than zero weight percent to less than about 50 weight percent, and B_2O_3 in a range of greater than about 5 weight percent, based on the total metal oxide content of the respective fiber.

50. The wire of claim 45 having an electrical conductivity of at least about 21% IACS.

51. A cable comprising at least one aluminum matrix composite wire comprising a plurality of substantially continuous, longitudinally positioned ceramic oxide fibers in a matrix comprising aluminum; wherein the fibers have a modulus of no greater than about 240 GPa; and further wherein the wire has a modulus of no greater than about 105 GPa and an average tensile strength of at least about 350 MPa.

52. The cable of claim 51 wherein the fibers have a modulus of no greater than about 173 GPa.

53. The cable of claim 52 wherein the fibers have a modulus of greater than about 69 GPa.

54. The cable of claim 52 wherein the fibers have an average tensile strength of at least about 1400 MPa.

55. The cable of claim 52 wherein the fibers comprise, on a theoretical oxide basis, Al_2O_3 in a range of about 35 weight percent to about 75 weight percent, SiO_2 in a range of greater than zero weight percent to less than about 50 weight percent, and B_2O_3 in a range of greater than about 5 weight percent, based on the total metal oxide content of the respective fiber.